



To:

see form PCT/ISA/220

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY  
(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/US2004/015206

International filing date (day/month/year)  
14.05.2004

Priority date (day/month/year)  
16.05.2003

International Patent Classification (IPC) or both national classification and IPC  
H04Q7/38, H04L12/56

Applicant  
QUALCOMM INCORPORATED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-49
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-49
Industrial applicability (IA)	Yes: Claims	1-49
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V.**

1. The present application contains nine independent claims: Four method claims and five system claims.

The independent claims have been drafted in such a way that they contain different versions of what appears to be a single general inventive concept.

In order to make this Written Opinion less complex it has been decided to issue this Written Opinion for the said single general inventive concept, covering hence similarly all the independent claims.

2. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 - 49 does not involve an inventive step in the sense of Article 33(3) PCT.
3. The following documents are referred to in this communication:

D1 : P. KARN, C. PARTRIDGE: "Improving Round-Trip Time Estimates in Reliable Transport Protocols" PROCEEDINGS OF SIGCOMM '87, vol. 17, no. 5, October 1987 (1987-10), pages 1-9, XP002304319

D2 : US 5 943 480 A (NEIDHARDT ARNOLD L) 24 August 1999 (1999-08-24)

4. Independent claim 1

Document D1 discloses (the references in parentheses referring to document D1):

a method for determination of link latency in a communications network having a link (page 67, abstract), the method comprising the steps of

upon commencement of a communication attempt, initiating a current round trip estimation process having a start time and an end time (page 68, lines 1 - 5),

setting a retry timer equal to the sum of a predetermined backoff period and the current estimated network delay,

if the retry timer expires before the end time of the potentially concurrent current round trip estimation process, updating the predetermined backoff period, and

at the end of the subsequent communication, resetting the current estimated delay equal to the difference between the end time of the current round trip estimation process and the start time of the current round trip estimation process (page 69, paragraph 2.2.).

The technical feature of determining an unloaded network delay, and using it as the first estimate for the round trip delay, is not specifically mentioned in document D1.

Said technical feature is, however, mentioned in document D2 (e.g. column 5, lines 14 - 20; column 8, lines 32 - 37; Claims 4 and 10), which falls in the same field of monitoring the communications of TCP-based networks.

A person skilled in said technical field of monitoring the communication of TCP-based networks would surely be aware of documents D1 and D2, and would readily combine, when faced with the problem of a lacking an initial round trip estimate, the initial round trip evaluation method of document D2 and with the Retransmission Time-Out calculation method of document D1, and in doing so would automatically arrive at the method of independent claim 1.

The subject-matter of independent claim 1 does not, therefore, involve an inventive step in the sense of Article 33(3) PCT.

5. Independent claims 8,16,17,23,32,43,48, and 49

Independent claims 8,16,17,23,32,43,48, and 49 appear to be method and system claims, the subject-matter of which correspond with the subject-matter of independent claim 1. Therefore the same objections, as indicated above at 4 for independent claim 1, apply also to independent claims 8,16,17,23,32,43,48, and 49.

The subject-matter of independent claims 8,16,17,23,32,43,48, and 49 does not, therefore, involve an inventive step in the sense of Article 33(3) PCT.

6. As indicated above at 1, it is considered that said independent claims 1,8,16,17,23,32,43,48, and 49 relate to the same single general inventive concept. This assumption allows for the analysis above at 5 to be made.

In case the Applicant disagrees with this assumption, the Applicant is kindly invited to provide reasons therefor backed up with convincing argumentation.

At this stage the Applicant is also reminded, that such argumentation can later be used to trigger non-unities in the present application.

7. It is acknowledged, that some of the independent claims mention features (e.g. registration, mobile IP, and home agent) which are not specifically mentioned in document D1 nor D2.

These features are, however, considered as not providing major contributions over the prior art.

In case the Applicant considers they do provide significant contribution over the prior art the Applicant is kindly invited to provide reasons therefor backed up with convincing argumentation.

8. Dependent claims 2 - 7

Dependent claims 2 - 7 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

The subject-matter of dependent claims 2 - 7 does not, therefore, involve an inventive step in the sense of Article 33(3) PCT.

9. Dependent claims 9 - 15

Dependent claims 9 - 15 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

The subject-matter of dependent claims 9 - 15 does not, therefore, involve an

inventive step in the sense of Article 33(3) PCT.

10. Dependent claims 18 - 22

Dependent claims 18 - 22 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

The subject-matter of dependent claims 18 - 22 does not, therefore, involve an inventive step in the sense of Article 33(3) PCT.

11. Dependent claims 24 - 31

Dependent claims 24 - 31 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

The subject-matter of dependent claims 24 - 31 does not, therefore, involve an inventive step in the sense of Article 33(3) PCT.

12. Dependent claims 33 - 42

Dependent claims 33 - 42 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

The subject-matter of dependent claims 33 - 42 does not, therefore, involve an inventive step in the sense of Article 33(3) PCT.

13. Dependent claims 44 - 47

Dependent claims 44 - 47 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

The subject-matter of dependent claims 44 - 47 does not, therefore, involve an inventive step in the sense of Article 33(3) PCT.